



**Clusters and Development: USAID's Rural Economic
Diversification Project in the Dominican Republic**

Four Case Studies

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1. Introduction: DR-CAFTA and the USAID RED Project

The Dominican Republic – Central American Free Trade Agreement (DR-CAFTA) is a comprehensive trade agreement among Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, and the United States which eliminates most tariff barriers to trade among the participating countries. The underlying rationale for the free trade agreement is to allow each country to develop its economy based on products and services where they enjoy a comparative advantage. In order to take full advantage of the opportunities offered by DR-CAFTA, the Dominican Republic must further develop its capacity to compete in the international marketplace by identifying products and services where the country possesses an inherent comparative advantage and strengthening its capacity to compete internationally in those products and services. It must also develop and execute a strategy to help current producers of products and services which cannot compete internationally (either in export markets or with imported products in the domestic market) to improve their productivity to international standards, or to diversify into new products where they will be more competitive.

The USAID/Rural Economic Diversification (USAID/RED) Project was designed to support efforts to assist small Dominican producers and processors of rural products to make the transition to a broader free market economy and to fully take advantage of the opportunities offered by DR-CAFTA.

Specifically, the USAID/RED project focused on: 1) strengthening clusters that produce non-traditional, rural export commodities in order to increase sales volumes, both in local and export markets; 2) strengthening agriculture-related small and medium enterprises; 3) improving the enabling environment for those enterprises to be able to grow and diversify; 4) promoting the sustainable management of the country's natural resources; 5) supporting enterprises to develop proposals to finance basic infrastructure to facilitate the marketing of agricultural goods; 6) developing strategies to ensure the sustainability of project interventions; 7) enhancing rural enterprise access to finance; and, 8) establishing alliances with private sector entities to leverage investment and financing.

The USAID/RED project's core mandate was to assist rural Dominican producers to diversify by supporting the development and strengthening of selected agricultural clusters and productive groups. The clusters identified for support included: 1) specialty coffee; 2) pineapple; 3) mango; 4) avocado; 5) banana; 6) greenhouse vegetables; 7) Open field vegetables; 8) cassava; 9) cacao; and, 10) wood and furniture products.

2. Project design

At the core of the USAID/RED strategy were the rural agricultural clusters and producer groups working in the selected commodities. In most cases, these clusters and producer groups were loosely organized, poorly managed, and in the early stages of development when USAID/RED initiated activities.

The project vigorously supported these clusters and producer groups through a mix of project tools, including specialized technical assistance, specialized technical and institutional strengthening training sessions, facilitation of access to formal channels of finance, cluster participation in trade fairs, and improvements to the enabling environment to increase investments in the country's rural sector.

a. The Cluster concept

In most cases, producers and other value chain participants were encouraged to organize themselves in “clusters” which, unlike existing producer associations, would also include participants from other stages of the relevant value chain in the local geographic area. Other participants might include processors or packers, distributors, input suppliers, or even non-value chain participants such as local universities, extension programs, or other service providers. The driving principle behind the cluster approach was that in order to successfully produce and market their products, all segments of the value chain would have to work together to meet the needs and requirements of the market.

The cluster concept was based on the work of Prof. Michael Porter of the Harvard Business School:

“Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions – such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations – that provide specialized training, education, information, research, and technical support. (...)”¹

b. Technical Assistance and the small grants program

The core of the USAID/RED project focused on 14 selected clusters, some of which had been initially created or supported by earlier USAID-sponsored projects. In each of the clusters, project technicians worked with the members of the cluster to create or improve its organizational structure and performance and to assist its members in various forms of productivity and quality improvements to enable them to become competitive in wider markets, including the United States. Most cluster improvement plans also included small grants made to the clusters to enable them to improve their productivity and competitiveness.

In a departure from the cluster concept as initially presented by Prof. Porter, the project also promoted the establishment of formal cluster organizations which, in addition to serving as the focal point for cluster improvement activities, were frequently created with a mandate to perform one or more value-chain functions, such as processing and marketing, which for reasons of economies of scale or access to capital were beyond the reach of individual cluster participants.

Through both technical assistance activities and the small grants program, the USAID/RED project worked with the 14 clusters in the areas of organizational development, productivity and quality improvement and certification, market access and access to financing. Specific activities were carried out in the form of training programs; on-site technical assistance; and the development, approval and implementation of small grants to purchase and install facilities and equipment to provide collective

¹Michael Porter, “Clusters and the New Economics of Competition” (Harvard Business Review, November-December, 1998).

post-harvest services such as processing and marketing to individual cluster members' primary production. In some cases, collective production activities were also supported, enabling groups of small or micro-producers to access value chains which they would be unable to do on an individual basis.

3. Project implementation: 2008 – 2012

The USAID/RED project was implemented under an initial three-year contract with Abt Associates, Inc., later extended for additional two years. As a condition for the award of the contract, Abt Associates was required to ensure the institutional capacity to continue to provide the necessary technical assistance beyond the life of the project through the creation or strengthening of an appropriate local organization. Pursuant to this requirement, an all-Dominican project staff was developed, and the *Fundación RED Dominicana (REDDOM)* was later created and staffed with the members originally hired to implement the USAID/RED contract.

Project implementation commenced in early 2008 and continued through the end of 2012. Beginning in 2011, all of the Abt Associates staff except the Chief and Deputy Chief of Party became employees of REDDOM, which assumed responsibility for the implementation of the project under a sub-contract with Abt Associates.

4. Four Case Studies

This paper presents four of the 14 clusters involved in the USAID/RED project, and examines in each case the role of the USAID/RED project in the areas of organizational development, productivity and quality improvement and certification, market access, and access to financing. The four case studies present the four clusters' respective business environments, organizational histories, problems encountered, components of support from the USAID/RED project, results of USAID/RED project interventions, and their situations at the end of the USAID/RED project in 2012.

A general discussion of the findings, or lessons learned, from each of the cases follows the presentation of the four case studies.

Case #1: The Furniture and Wood Cluster

The furniture industry as well as those that supplied it in the Dominican Republic were traditionally small scale family enterprises or, in the case of forestry products, associations of small producers. Furniture producers typically purchased their raw materials through local retail hardware or building supply stores, and it was estimated that only one percent of their purchases were of Dominican origin. The output of the Dominican furniture industry consisted essentially of hand crafted individual pieces produced in hundreds of small workshops none of which had either the scale or sophistication to mass produce furniture or meet the increasingly demanding requirements of the country's growing tourism sector or new residential construction.

Although imported furniture had always played an important role in the Dominican market, its relatively high cost provided space for the Dominican furniture makers to also participate in the market. In recent years, however, large quantities of low cost (but good quality) furniture produced in Asian countries such as Malaysia, Indonesia and China threatened the livelihoods of hundreds of small Dominican producers.²

Lacking the organizational and physical infrastructure to properly process lumber, the country's forest products industry was only able to serve the least demanding segments of the construction industry or export unfinished lumber to countries where it could be properly dried and finished. At the same time, it was estimated that the industry met only 20% of the country's overall demand for lumber, with the balance imported from abroad. Although several agro-forest producers associations had been created, they had not been effective in either improving their members' ability to sell to Dominican buyers, or to halt the degradation of the forests due to poor forest management practices.

In addition to lumber, other domestic sources for furniture supplies existed but were not being exploited. One such example was woven natural fibers which were needed inputs for furniture makers. Both the raw materials and skilled weavers were available but existed as latent resources due to a lack of organization and market access.

Formation of the Dominican Furniture and Wood Cluster

In 2007, recognizing the growing threat to their existence as an industry, a group of 50 Dominican furniture producers formed the Furniture and Wood Cluster with the idea of working together to collectively meet the needs of large buyers including prominently various government ministries.

Prior to the establishment of the cluster organization, each furniture producer had been fiercely independent and distrustful of all other producers to the point of not allowing them to enter each other's workshops. Furniture producers felt that they were competing against each other, and that a sale made by one was a sale lost by another in a limited and increasingly difficult market. Little if any

² Adding insult to injury, laws promoting the tourism sector allowed hotels to import foreign-manufactured furniture duty free while the domestic furniture industry was subject to duties on its imported raw materials.

thought had been given to any idea of collective purchasing of supplies or collective marketing of their products, nor of increasing the local content of their products in order to reduce their costs.

The USAID/RED project

In 2008 the group signed a Memorandum of Understanding with the USAID/RED project under which the project would provide assistance in the organizational development of the cluster, as well as with specific activities required to help the cluster improve its position.

The overall strategy of the new cluster organization was to bring together as many participants as possible in the wood and furniture cluster, including forest products producers and processors, suppliers of textiles and other non-wood inputs to furniture, furniture producers, sales organizations, financial institutions, and anyone else involved in the wood and furniture supply chain with the purpose of facilitating both business transactions between cluster members, and collective purchase or sales agreements between cluster members and suppliers or large customers. Of great importance was the possibility of production sharing arrangements whereby cluster members would work together with each member specializing in one or another aspect of the production process.

Another major strategic goal was to incorporate more Dominican content into the products sold by the cluster, including both wood and textile products. In order to do so, however, the quality of each would have to be significantly improved.

Project implementation

Organizational development: As the cluster's leadership set out to implement its development strategy, it realized that its first task would be to overcome the long standing distrust which existed among its membership towards each other. Under the leadership of an Executive Director hired by the cluster with funds donated by the USAID/RED project a series of activities including both formal facilitated workshops and informal social events helped the cluster's membership to gradually overcome its distrust of one another and prepare for the next phase of the organization's development.

Following its initial organization, the Cluster began to implement its strategy by strengthening four forest products organizations which had become members of the Cluster, and five women's textile groups which would supply woven fibers as inputs for furniture. In addition to helping each of these groups to strengthen their own organizations, a major focus of the organizational development activities with both the agro-forestry producers organizations and with the newly-formed women's textile groups was the development of contacts leading to commercial relations between these two groups and the furniture manufacturers.

At the same time, the organization began to pursue joint marketing opportunities and contracts with major buyers in which various cluster members might participate in production sharing arrangements. An initial contract with the Ministry of Education, negotiated on behalf of the cluster by the Executive Director, involved 20 of the cluster's furniture manufacturers and a common set of quality and delivery standards. This first experience in production sharing has led to eight additional contracts by mid-2012.

Due to the increased level of communication, contact and trust within the cluster, members also began to develop their own production sharing arrangements and in general, increase the level of intra-cluster purchases and sales. By having previously established a basis of trust, Cluster members were more willing to work together, advance credit, or participate jointly in sales arrangements.

By late 2012 the cluster was made up of 71 members including five natural fiber weavers groups, and four wood producers groups (each group counting as a single member of the cluster), together with furniture producers and other participants in the wood and furniture value chain.

Technical assistance and small grants: Complementing the organizational development activities, various forms of technical assistance and small grants for the purchase of critical equipment were provided by the USAID/RED project. These included:

- Technical assistance to furniture processors in productivity improvement and furniture design
- Purchase and installation of six wood kilns for drying lumber produced by Dominican suppliers (and members of the cluster through their agro-forestry associations)
- Technical assistance for a saw mill associated with the wood producers{ associations in order to improve productivity and reduce waste
- Technical assistance and materials to replant over 300 hectares of forest land with pine and hardwoods, and to promote the sustainable management of forests
- Technical assistance to weavers of natural fibers in design and productivity improvement.

Project results

By late 2012, the Furniture and Wood Cluster, with the technical and financial support of the USAID/RED project, had increased seven-fold the incorporation of domestically-produced inputs (primarily wood and woven fabrics) in the production of the cluster's furniture makers. It had also generalized the practice of production sharing in which cluster member purchased and sold supplies and semi-finished products between themselves, and participated jointly in fulfilling large contracts (such as for student desks and chairs for the Ministry of Education). The project had led to significant productivity improvements, ranging from 20% to over 30% for 47 of its furniture-maker members; 24 prototypes for new products; and the incorporation of 132 rural weavers of natural fibers into the wood and furniture value chain.³

Although the cluster's leadership had decided that the position of Executive Director was no longer required, it had hired a sales agent to identify market opportunities for the cluster's membership. The sales agent's expenses were paid by a commission on sales obtained for cluster members. Among other sales, an additional eight contracts had been signed between the cluster and the Dominican Republic's Ministry of Education.

³ As a direct result of their incorporation into the Wood and Furniture Cluster, the rural weavers groups have expanded and diversified their production into other natural fiber handicrafts with the assistance of a grant from the Inter-American Development Bank's Multilateral Investment Fund (MIF).

The Future

By 2012 the Furniture and Wood Cluster had seen its productivity and overall sales increase, and had dramatically increased the level of interactions between its members, including both the purchase of inputs from suppliers such as the wood producers associations and natural fiber weavers groups, and production sharing among the furniture makers. But in order to remain competitive cluster members would need to continue to improve their productivity and reduce costs, as they would face increasing pressures from large furniture producers in countries such as Indonesia, Malaysia and China. The challenge facing the Furniture and Wood Cluster was how to build on the success achieved during the past five years to remain sustainable in the face of increasing international competition.

Case #2: The Constanza Horticultural Cluster

On September 5, 2012 members of the Constanza Horticulture Cluster loaded a refrigerated container parked adjacent to the recently inaugurated Hortipack vegetable packing plant with 25,000 pounds of red bell peppers in 11-pound crates for shipment to SunFed, a privately held grower-packer-shipper in the United States. As the container was loaded, final documentation came through from the Government's Department of Food Safety providing evidence that Hortipack met the food safety requirements of the Dominican food safety regulators. As the first of thirteen containers of bell peppers to be shipped to SunFed during the 2012/2013 crop year, this shipment would also test Hortipack's ability to meet the agricultural and food safety requirement of the United States Government's Food and Drug Administration (FDA) in order to be sold in the United States.

The shipment of bell peppers from the Constanza Valley to the US market marked a historic first for the Constanza Cluster's grower-members and supported the prospect of transforming vegetable production and improving the livelihoods of small and medium vegetable producers throughout the entire Constanza Valley.

With over 30,000 tareas (1,887 hectares) planted to potatoes, onions, garlic and other vegetables, the Constanza Valley was considered to be the Dominican Republic's principal sources of fresh vegetables for the domestic market. In past years, several commercial farms in Constanza had exported their own produce to the United States. By 2008, however, increased levels of contamination in the valley's water and soils due to excessive use of chemical pesticides, together with increasingly stringent food safety standards imposed by the Food and Drug Administration in the United States had apparently forced these ventures out of business.

Farmers typically harvested their produce and sold it to intermediaries or drove it to the public markets in Santiago, Santo Domingo or other smaller markets from where local distributors made final deliveries to grocery stores, with little attention paid to selection, grading, packing, food safety codes or potential problems related with excessive use of pesticides.

The Constanza Horticulture Cluster and the USAID/RED project

The events leading to Hortipack's first export shipment began in 2007 with a study undertaken by the Dominican National Competitiveness Council (CNC) supported by a grant from USAID. This study concluded that several vegetables including celery, carrots and lettuce produced in Constanza would be competitive in Caribbean markets (including Puerto Rico) and the United States. Based in part on this study, six vegetable producers joined together in 2008 with the idea of developing their capacity to collectively enter these export markets as well as reduce their reliance on intermediaries in the domestic market.

Following initial contact and discussions with the recently-initiated USAID/RED project, the group of vegetable producers with the assistance of the USAID/RED project embarked on a set of activities designed to improve their incomes through improved productivity and access to diversified markets.

Organizational development:

As a first step, the USAID/RED project began working with the small group of vegetable producers to form the Constanza Horticultural Cluster (CHC), a legally registered non-profit organization which, unlike existing producer associations, would also include participants from other stages of the vegetable value chain in the Constanza area. Such other participants might include packers, distributors, input suppliers, or even non-value chain participants such as local universities, extension programs, or other service providers. The driving principle behind the cluster approach was that in order to successfully produce and market vegetables produced in Constanza, all segments of the value chain would have to work together to meet the needs and requirements of the market.

The Constanza Horticultural Cluster evolved slowly, and its formal registration as a non-profit organization was only obtained in February, 2010. By mid-2012 the Cluster's membership had risen to a total of 39 (of which 34 were active), including vegetable producers, input suppliers, and the Dominican Agricultural Research Institute. Due to its commitment to Good Agricultural Practices (GAP – see below) and the protection of the natural environment, the Cluster limited the enrollment of new members to only those who demonstrated a commitment to observe the Cluster's policies in these areas and whose commitment to quality was consistent with that of the founding members. Of special interest was a group of 27 low-income women, organized as the *Federación Matilde Viñas*, who collectively produced bell peppers in their greenhouse as well as other vegetables in an open field, and who joined the cluster as a single organizational member.

1. Technical assistance in improved agricultural productivity and Good Agricultural Practices

Prior to 2008, CHC's members produced their crops in open fields and employed traditional pesticides to protect them from insects and disease. CHC's members recognized that their traditional forms of plant protection would have to change due to ever stricter food safety requirements in both the domestic and international markets, as well as a wider recognition of the damage to the natural environment (as well as to consumers) caused by indiscriminate use of chemical pesticides. They were especially conscious of the need to protect the valley's increasingly scarce supply of clean water. They also recognized that in order to be competitive in international markets, their costs of production would have to be substantially lower.

With the assistance of the USAID/RED project, two sets of activities were initiated to reduce costs, increase productivity and reduce the use of chemical forms of plant protection.

Protected agriculture: As a first step in helping the producers to reduce their costs and at the same time increase their productivity, the USAID/RED project constructed ten "micro-tunnels" or small greenhouses on the property of the CHC founding members with the purpose of demonstrating the benefits of protected agriculture. The primary benefit of protected, or "greenhouse" agriculture was that ideal growing conditions could be maintained while avoiding the need for most forms of chemical plant protection. Yields, often measured on a square meter basis, were significantly higher than in open fields, while production costs were reduced due to the absence of need to apply pesticides.

Good Agricultural Practices (GAP): Although the use of micro-tunnels reduced or eliminated the need for chemical forms of plant protection, most of the crops produced for sale in local markets continued to be produced in open fields. CHC's members recognized their need to adopt Good Agricultural Practices in order to address the problems caused by traditional forms of plant protection in open field farming.

"Good Agricultural Practices" or GAP was an integrated approach to agricultural production intended to ensure that food products reaching consumers were free of any sort of physical, chemical or biological contamination, and that the production processes employed provided greater levels of protection to the natural environment and to the agricultural laborers who produced the crops. Reflecting the world-wide movement towards improved food safety and a more environmentally-sustainable form of agriculture, the Ministry of Agriculture of the Dominican Republic had developed a set of standards which, when observed on a consistent basis, led to the certification of Dominican agricultural producers in Good Agricultural Practices. GAP standards included Integrated Pest Management (IPM), an approach to plant protection based on the use of biological agents and natural enemies rather than the application of agrochemicals.

As part of the USAID/RED technical assistance provided to the Constanza Horticultural Cluster, a series of training and demonstrations in GAP and IPM were held beginning in 2009, and USAID/RED technical personnel provided continuous assistance and monitoring of farmer practices as they began to employ GAP in their own commercial production. In August, 2012, four of the Cluster's producing members were part of the first group of Dominican agricultural producers to be certified in Good Agricultural Practices, and several additional members were preparing for the following round of certifications.

The combination of protected agriculture and the employment of Good Agricultural Practices, both inside the micro-tunnels and in open fields, led to significant savings and productivity increases for the producer members of the Constanza Horticultural Cluster, with savings of up to 79% of the cost of traditional forms of plant protection for row crops such as garlic, broccoli, coli flour, and carrots.

2. Renovation, installation of new equipment, and certification of the Hortipack vegetable packing plant:

A third initiative was the renovation of a vegetable packing facility through a joint venture between the Cluster and three of its members. Although the Cluster's initial activities, undertaken with the assistance of the USAID/RED project, were focused on improving agricultural productivity and introducing Good Agricultural Practices, the long-term primary objective of the Cluster's membership was to develop the capacity to export into the U.S. market. CHC's members planned to join together to develop commercial relations with foreign markets, and to pool their individual production so as to offer the volumes necessary to be attractive.

In the absence of existing facilities, post-harvest activities such as cleaning, sorting, packing, storing and shipping would have to be carried out in a new packing house to be built to meet the needs of the cluster's membership and in accordance with food safety standards in the importing country. This meant that shipments to export markets needed to be free of chemical residues as well as insects or pathogens which might cause damage to either consumers or plants or animals in the importing country.

In practical terms, CHC's proposed packing house would need to process only products produced under GAP, and would itself have to be certified in Best Manufacturing Practices (GMP) by the Ministry of Agriculture's Department of Food Safety. (While GAP/GMP certification is not a requirement for entry into the United States, it provides essential information to the producer and exporter regarding the likelihood that its shipments will meet FDA requirements. Products and shipments which are not in compliance with GAP/GMP are unlikely to meet FDA requirements.) In order to enter the United States, each shipment must be cleared by the United States Food and Drug Administration (FDA)⁴, and in order to sell to the more demanding US purchasing organizations, it was recommended that the packing house also obtain private certification from one of the recognized food safety certification agents serving the needs of the U.S. food industry.

Members of the Constanza Horticulture Cluster initially proposed to the USAID/RED project that they jointly finance a new "green field" packing house. After further analysis, an alternative solution was found in an abandoned packing house, property of one of the Cluster's members who offered to rent it to the Cluster or its members on a long-term basis. While the USAID/RED project offered to partially finance the renovation of the plant and the installation of new machinery, not all of the Cluster's members were in a position to assume the financial responsibility to make up the difference. An innovative solution was found whereby a new company – Hortipack – was created as a private company with shares owned by three individual investors – all members of the Constanza Horticultural Cluster – and the Cluster itself, which received a grant from the USAID/RED project for the purpose of investing in Hortipack.

After signing a lease for the abandoned packing plant, Hortipack completely renovated the building and purchased and installed the equipment required to receive, wash, sort and select, pack and cold-store vegetables produced by its members. All renovations were carried out with strict attention to meeting the certification requirements of the Dominican and US governments. Once complete, Hortipack contracted with Primus Labs, a food safety company in the United States which provides private certification of fresh produce suppliers to meet the needs of US buyers.

The total cost of renovating and equipping the new packing plant came to approximately US\$136,500, of which US\$53,750 was financed through a grant by USAID to the CHC for the purchase of shares in Hortipack, and \$82,750 by the three private investors.

3. Development of marketing arrangements for the export of Hortipack produce to international buyers:

The events leading up to CHC's initial shipment of bell peppers to SunFed began with a USAID-sponsored trip to Miami by members of CHC's leadership in order to attend a trade fair, where initial contact was made with SunFed representatives. This was followed by a visit to the Dominican Republic by SunFed

⁴A packer/exporter to the United States, after multiple trial shipments that have been analyzed and demonstrated to be in compliance with FDA regulations regarding chemical residues or the presence of pathogens, may become "registered" with the Food and Drug Administration and placed on its "Green List" which reduces or eliminates the requirement for individual testing of future shipments.

representatives and a return visit by members of CHC's Board to SunFed's headquarters in Arizona. Based on this series of contacts and a developing relationship between the two parties, a contract was negotiated in which Hortipack committed itself to ship bell peppers to SunFed which would act as Hortipack's broker and sell them on a best efforts basis to its client base. Following standard commercial practice, SunFed would deduct from the final sales price all costs related to shipping and handling, plus a brokerage commission and return the difference to Hortipack.

The initial shipment of red bell peppers

The first of nine containers of red bell peppers left the Hortipack packing house on September 5, 2012. After clearing Dominican export formalities, the container was loaded aboard a container ship for the short trip to the Port of Miami in Florida.

Upon arrival in Miami, the container was inspected by the U.S. Animal and Plant Health Inspection Service (APHIS) for insects which might pose a threat to U.S. agriculture, and then sent to SunFed's warehouse in the Miami area, where it was unloaded and placed in cold storage awaiting clearance by the Food and Drug Administration. Since this was the first shipment by Hortipack, it was subjected to extensive testing and was not released for a full ten days.

The prices at which Hortipack's first shipment was sold were significantly below the expected price due to the ten-day delay in the release of the first shipment of bell peppers, the accumulation of additional production from Constanza as more containers arrived before the first ones could be released, and falling prices in the Miami wholesale market for bell peppers during the month of September. After deducting shipping and handling charges (SunFed waived its commission on the first shipment due to the low sales price), the final liquidation by SunFed to Hortipack was insufficient to cover its costs and represented a significant loss to the producers.

During the remainder of September, October and early November, Hortipack shipped an additional twelve containers of bell peppers to SunFed. Subsequent shipments were subject to delays for FDA testing, although for shorter periods of time. Low market prices during these two months led to disappointing final results to Hortipack and the CHC producers for its first season of fresh vegetable exports. CHC and Hortipack accepted their losses during the initial season as a "cost of learning" but felt that improved net financial returns in future seasons would be needed to justify continued shipments.

The challenge facing the Constanza Horticultural Cluster and Hortipack was to make the adjustments in their production, packing and marketing systems to ensure the long-term profitability of producing fresh vegetables for export to the United States.

Case #3: The MOVICAC/NACAS Cluster (MOVICAC)

Coffee grown in the Dominican Republic had a mixed reputation in international markets despite near perfect growing conditions in terms of altitude, latitude, rainfall and soil. Dominican coffee's "medium acidity, great aroma and full body with rich earthy tones" was frequently lost due to poor post-harvest handling and processing, as well as the industry's structure which failed to provide sufficient means or incentives for small coffee producers to improve quality.^{5,6}

Coffee growers generally "wet milled" their own coffee immediately after it was harvested. This process involved passing the ripe coffee cherries through a pulping machine to remove the outer skin and pulp surrounding the shell (*pergamino* or parchment) containing the coffee bean, and fermenting the parchment to remove a slippery mucilage. The pulped and fermented parchment coffee was then washed and pre-dried in the sun before being bagged for sale to local buyers or directly to local *factorias* or dry mills as "wet parchment coffee" (*café aguaseca*).

Between 2000 and 2500 liters of water were required to wet mill one quintal (qq)⁷ of parchment coffee. The water contaminated by the wet milling process was generally not recycled, and in the worst cases, was returned to the water source, thus contaminating the supply for downstream users.

An estimated two thirds of the country's coffee was produced on farms of 100 tareas (6.3 hectares) or less, distributed throughout the country's six principal growing regions. Due to the relatively small scale of their coffee farms, growers often transported their harvested cherry coffee to a neighboring wet mill or processed it themselves in rudimentary wet milling facilities. In either case, the quality of the wet parchment coffee sold to buyers was compromised due to a lack of separation of green or overripe cherries and other extraneous debris from the perfectly ripe coffee cherries which produced the highest quality coffee beans. It was further compromised when coffee harvested over several days was mixed together before being wet milled, as a natural fermentation process would begin in the cherries which had not been processed within 24 hours after being harvested, degrading the quality of the entire lot.

Due primarily to the lack of sufficient quality controls during the traditional wet milling process, the parchment coffee produced by small farmers was generally of insufficient quality to be exported and was purchased by less demanding buyers for domestic consumption. And because an estimated 95% of the domestic market was controlled by a single coffee marketing and distribution group, small farmers had few alternatives to selling their parchment coffee into a value chain which was not organized to differentiate or reward small producers for higher quality coffee. Because of both the undifferentiated quality of their wet parchment coffee and their lack of marketing alternatives, small coffee growers were trapped in a cycle of poverty which offered few possibilities for improved livelihoods.

⁵ "Navigating Origins: Dominican Republic" *Roast*, September/October 2004, page 78.

⁶ As reported in *Tea & Coffee*, "the chairman of a large specialty coffee association has said that 'Dominican coffee is much better than Jamaica's Blue Mountain' – which retails for upwards of \$90 a pound in Tokyo." ("Dominican Republic Gets Serious About Quality Coffee Exports," *Tea & Coffee*, Volume 175, No. 9, Sept./October, 2004).

⁷ One quintal = 50 kilograms in the Dominican Republic's coffee sector.

Origins of MOVICAC

The organization which eventually became MOVICAC was established in the late 1990s by 22 small coffee producers who joined together for the purpose of collectively marketing their parchment coffee directly to coffee mills rather than through intermediaries. In 1998 Hurricane George destroyed not only their debt-financed infrastructure, but also nearly a full year's worth of unsold coffee inventory belonging to the association's members. Following the hurricane's devastation, 52 small coffee producers including the original 22 founding members formed MOVICAC as a vehicle to channel development assistance and help its members to improve their livelihoods through the collective processing and marketing of their coffee to national and international markets.

During the following ten years, with the financial assistance of various national and international development programs MOVICAC rebuilt its warehouse and patio drying facilities, and installed the machinery necessary for it to hull and bag green coffee⁸ for sale in the national market. While these activities resulted in marginal improvements in the participating farmers' net income, the coffee sold through MOVICAC still suffered from a lack of control at the wet milling stage and a lack of quality differentiation during the later stages of the processing and marketing process. MOVICAC coffee continued to be sold primarily into the domestic market and only at a discount to the New York "C" contract price.

The USAID/RED project

In 2008 the USAID/Rural Economic Diversification (USAID/RED) project identified an opportunity to help MOVICAC to improve the quality of its coffee as an initiative which would provide significant benefits to small coffee producers in its area of influence. The project also believed that assistance to MOVICAC (as well as two other similar small coffee producer organizations) might have a transformative impact on the entire Dominican coffee industry by enabling many more small producers to increase their incomes by improving the quality of their coffee and expanding their sales into competitive international markets.

Working with MOVICAC's leadership, a strategy was designed to improve the quality of the coffee sold by the association by concentrating on the post-harvest handling, processing and marketing aspects of the coffee cycle. USAID/RED provided partial financing for the acquisition of equipment and the construction of drying facilities, as well as technical assistance to aid MOVICAC in implementation. The strategy to improve the quality of the coffee produced by MOVICAC's members involved five critical elements:

1. The acquisition and installation of 16 "ecological" wet mills serving 149 of the association's most active coffee growers in groups of between 4 and 16 producers each and operated under the

⁸ Following the wet milling process, dry parchment coffee may be stored and hulled throughout the year. The primary function of the "dry mill" or *factoria* is to remove the parchment hull, sort the "green coffee" beans by size and weight, and bag green coffee into 60 kilo bags for sale to domestic or international markets.

supervision of MOVICAC personnel. The technology involved in these new wet mills reduced the amount of water consumed from an average of 2250 lts/qq to 150 lts/qq; eliminated the need for fermentation (which when not well controlled, damaged the quality of the coffee bean); and resulted in fewer broken or damaged beans from abrasion during the depulping process. A pre-selection process was also introduced in which the harvested cherries were placed in water prior to depulping, and those cherries which were either too ripe or not ripe enough floated to the surface and were eliminated leaving only the perfectly ripe cherries for further processing. This eliminated the need to manually select and remove defective beans after dry milling. Centralized control over the new wet mills also eliminated the risk of comingling newly picked coffee with coffee which was harvested more than 24 hours earlier and may have already begun to ferment. As a result of the elimination of unripe and over-ripe cherries as well as the reduction in beans damaged during the wet milling process, the percentage of wet-milled coffee which did not meet export standards was reduced from 38% using traditional wet milling technology, to 10% using the new “ecological” wet mills. Furthermore, the cost of wet milling was reduced from approximately \$12/qq to less than \$3/qq due to the elimination of the fermentation stage and the manual selection of defective coffee beans which was required using traditional methods.

2. The acquisition and installation of additional equipment and facilities to adequately dry and process the “wet parchment coffee” delivered by producers to the dry mill or *factoría*. The drying facilities consisted of both drying “tunnels” (greenhouse-style structures which allow for sun drying while protecting the beans from the rain) and mechanical dryers. These improved drying facilities allowed MOVICAC to stabilize the coffee beans in order to maintain the uniform quality of each lot and eliminate quality variations caused by uneven drying. Additional processing equipment included the acquisition or refurbishment of machinery to sort green coffee beans on the basis of size, weight and color. By providing these services MOVICAC was able to further differentiate its members’ coffee and to sell individual lots or even “micro-lots” based on their unique quality characteristics.⁹
3. The development of management and control procedures which permitted “traceability” or the ability to isolate and track each lot of coffee by farmer and place of origin from its reception at the wet mill through final bagging and sale. This made it possible to reward individual farmers for superior quality coffee (or suffer the consequences of delivering below-standard coffee).
4. The development of a product differentiation and marketing capability. This involved an initial separation of coffee lots by quality categories upon arrival at the *factoría*, and further classification by laboratory analysis and an experienced coffee taster (or “cupper”) to determine which lots should be isolated and sold as “micro-lots” to specialized international buyers, and which lots should be mixed together for sale in larger quantities to specific markets (domestic or

⁹ Quality grades depend on a complex set of factors involving individual growing conditions (soil, altitude, rainfall, etc.), as well as harvesting and processing procedures. Sorting by size, weight and color permits maximum differentiation.

international). MOVICAC then made use of contacts with international coffee buyers established through various trade fairs and trade missions sponsored by the Dominican Coffee Council and the Dominican Specialty Coffee Association, as well as its own expanding network of contacts in the international coffee market, to sell specific lots or micro-lots to buyers based on their grades and taste profiles.

5. The development of a system to reward its members for high quality coffee. MOVICAC paid its members an advance of up to 80% of the domestic market price¹⁰ for coffee on the day of delivery to MOVICAC. After the coffee was processed and sold, MOVICAC paid the member the price received for that member's coffee less processing and marketing costs, an institutional support fee equal to 15% of the "net benefit,"¹¹ and the amount advanced when the coffee was originally delivered to the *factoría*. (The institutional support fee was used to finance various social assistance programs operated by the association.) On average, a MOVICAC coffee-producing member received a net benefit after the 15% institutional support fee equal to approximately 20% of the domestic market price on the day the coffee was delivered to the *factoría*. The exact amount of the net benefit, of course, varied with the quality of the coffee delivered.

It is important to recognize that the ability to reward individual farmers for the quality of their coffee was the result of all of the previous elements of the strategy, including improvements to the wet and dry milling processes; grading coffee by size, weight and color; the traceability of individual lots of coffee; and the sale of coffee by grade to markets willing to buy specific quality characteristics.

A more recent initiative undertaken with financial and technical support from the USAID/RED project was the development of a capacity to manufacture and sell packaged private label or MOVICAC branded roasted coffee for the domestic market and for export to niche markets. This initiative was built on the association's capacity to identify appropriate grades for further processing; additional investment in roasting, grinding and packaging equipment; and the further development of commercial contacts beyond the traditional buyers of green coffee.

The results

The various investment and institutional strengthening activities carried out with the support of the USAID/RED project took place between 2008 and 2012. Capital investments were made in the installation of 16 "Ecological" wet mills; 12 drying "Tunnels;" additional machinery for sorting green coffee by size, weight and color; a coffee roasting machine and assorted accessories; laboratory equipment; and general office equipment and furniture. Investments were financed by a combination of grants from USAID made through the USAID/RED project, and counterpart financing from MOVICAC. (See table 1 below).

¹⁰ The price offered for wet parchment coffee to independent producers by the dominant purchaser of coffee for the domestic market.

¹¹ The "net benefit" was calculated as the sales price minus the domestic market price on the day of delivery to the *factoría*, less the *factoría*'s processing, marketing and administrative cost.

Table 1: Investments in machinery and equipment 2009 – 2012			
Item	USAID/RED	MOVICAC	TOTAL
“Ecological” wet mills	\$66,700	\$108,300	\$175,000
Dry mill installations and equipment	\$71,275	\$79,950	\$151,225
Coffee roasting and packaging equipment	\$65,625	\$320,500	\$386,125
Total	\$203,600	\$508,750	\$712,350

In addition to the investments in equipment, technical assistance was offered by the USAID/RED project to both MOVICAC itself, and to MOVICAC’s member coffee producers. The technical assistance received by the association is summarized in table 2 below.

Table 2: Technical assistance received through USAID/RED 2008 – 2012	
Form of technical assistance	Number of beneficiaries
Post-harvest handling	100 producers & 9 technicians
Ecological agriculture	100 producers & 9 technicians
Agricultural marketing	9 directors
Good Agricultural Practices (GAP) certification	22 producers

By mid-2012, MOVICAC’s membership had grown from the original 52 members to 575, and its sales of green coffee had increased from 7,120 60-kilogram bags in 2009/10 to 10,027 bags in crop year 2011/2012, as shown in table 3.

During this same period, the average price received per quintal increased from \$142.70 to \$210.12 as a direct result of MOVICAC’s ability to improve the quality of its members’ coffee through improved post-harvest handling, processing and marketing. Not only did the percentage of bags sold to international buyers increase, but the average prices received in export markets increased from -\$5.90 to +\$20.46 per QQ relative to the ICO indicator price for other mild Arabicas, another indication of MOVICAC’s success in improving the quality of the coffee sold for export (see table 3).

Table 3: Moviacac Green Coffee Sales 2009/10 – 2011/12

	Green coffee export sales			Green coffee domestic sales			Total green coffee sales			ICO indicator price other mild Arabicas	Moviacac export sales premium (discount)
	60 kilo bags	Value (US\$)	Avg. sales price (US\$/QQ)	60 kilo bags	Value (US\$)	Avg. sales price (US\$/QQ)	60 kilo bags	Value (US\$)	Avg. sales price (US\$/QQ)		
2009/2010	2,785	\$569,885	\$170.52	4,335	\$649,398	\$124.83	7,120	\$1,219,283	\$142.70	\$176.43	-\$5.90
2010/2011	5,202	\$1,692,134	\$271.07	4,510	\$717,427	\$132.57	9,712	\$2,409,561	\$206.76	\$268.55	\$2.53
2011/2012	7,168	\$1,954,446	\$227.23	2,859	\$573,694	\$167.21	10,027	\$2,528,141	\$210.12	\$206.77	\$20.46

MOVICAC's coffee growing members benefit from their affiliation with the association and the USAID/RED project in three important ways:

1. By reducing their processing costs as they moved from the traditional wet milling process to the new "ecological" wet milling process;
2. By delivering their "wet parchment coffee" to MOVICAC for further processing and sales rather than selling it to local intermediaries or privately-owned *factorías*; and
3. By selling higher quality coffee in the international market due to:
 - a. Improvements in the wet milling process
 - b. Sorting, selection and grading procedures
 - c. Marketing differentiated coffees to targeted segments and niches in the international market.

Further benefits include the contribution to MOVICAC's social assistance programs and the savings of approximately 21 million liters of water per year due to the use of the ecological wet milling technology ((2250 – 150) lts/qq * 10,000 qq/year = 21 million liters per year.)

MOVICAC in 2012

By mid-2012, MOVICAC had demonstrated its ability to move from selling a single "standard" quality of coffee to reaching niche markets with micro-lots and serving the specialty coffee market with coffees based on their sensorial grade. MOVICAC also marketed a new "*denominación de origen*" coffee¹² – Valdesia – which MOVICAC and selected coffee producers were authorized to sell following a rigorous certification process. MOVICAC had seen its membership expand and its members benefit from the various sources of quality improvement and the dramatic increases in prices they received for their coffee. It had also successfully produced and marketed roasted coffee in the domestic market under its own "Tambor" and "Monteverde" brands, and to niche markets in the United States under a private label. By the end of the 2011/2012 season, MOVICAC had processed and sold over 12,000 qq of green coffee, the vast majority of which were exported, as well as nearly 8 metric tons of roasted and ground coffee in both the domestic and export markets.

Although MOVICAC's physical capacity to dry, store and process coffee was approximately double its 2011/2012 volume, MOVICAC's producers were frequently forced to sell a portion of their wet parchment coffee through traditional channels in the local market due to working capital limitations which were, in turn, constrained by the organizational and financial structure of the association.

MOVICAC required working capital to finance advances of up to 80% of the local market price at the time of delivery to the *factoría*; and the expenses of storing, processing and shipping the coffee.

¹²*Denominación de Origen* coffee was certified by the Dominican Coffee Council to meet both geographical and exacting quality requirements.

MOVICAC sold its coffee FOB and was only paid for the coffee it sold in export markets upon the delivery of shipping documents. Since coffee was harvested during a relatively short period of time but sold throughout the year, the requirements for working capital were significant.

MOVICAC financed its working capital needs through local financial institutions with lines of credit especially designed to meet the needs of coffee exporters, but it was limited in the total amount of indebtedness by its own capital structure. Since a significant portion of its plant and equipment had been financed through long-term debt, and much of its inventories were financed with short-term debt used to make advance payments to the producers, MOVICAC's net assets available to guarantee further indebtedness were minimal. And since the association was legally organized as a non-profit organization and had no "owners," it was unable to increase its working capital with the infusion of additional shareholder capital as would be the case for a cooperative or private corporation, despite the fact that its members were receiving significant net benefit payments over and above the base price for their coffee due to the organization's success in grading and marketing superior quality coffee in the international market.

By mid-2012, MOVICAC's leadership had recognized that, having overcome its quality constraints and successfully sold into lucrative international markets, the next hurdle to be overcome was the limit to its working capital. This, in turn, limited its ability to continue to increase the amount of coffee it could purchase from its members and the number of members who might benefit from the organization. Overcoming this limitation might involve a change in the organization's legal structure from a non-profit organization to something closer to a cooperative, which would then permit the membership to contribute to the association's capital structure through retentions of a portion of the net benefits currently paid out to producers following the sale of their coffee.

As MOVICAC prepared for the new 2012/2013 coffee year, it would need to decide if 12,000 qq from under 150 active producer-members constituted the upper limit of its growth potential, or if the organization would be able to extend its benefits to additional coffee producers within its area of influence. In order to continue to grow, the problem of working capital would have to be addressed.

Case #4: The Red Guaconejo Cooperative

By late 2012, after nearly five years of support from the USAID/RED Project, members of the Red Guaconejo Cooperative had improved the productivity of their cacao plantations and the quality of their cacao, and 157 of them (out of a total of 190) had been certified as organic producers. Their cooperative had increased its capacity to produce export-quality cacao, and had developed commercial relationships with various cacao buyers in the United States, including its principal buyer, Taza Chocolate in Somerville, Massachusetts. Financing had been secured via a tri-partite arrangement involving Root Capital – a non-profit social investment organization in Cambridge USA, Taza Chocolate, and the Cooperative. Guaconejo's cacao exports to Taza Chocolate had increased from an average of 14 quintals a month in 2007 to three containers or 1,500 quintals in 2012.

Despite these impressive achievements, the cooperative struggled to meet its basic operating expenses and was unable to keep up with required investments in plant and machinery. The cooperative's management estimated that it would need to export 6 or 7 containers per year in order to meet expenses and make the necessary investments in fixed capital. But members' 2012 deliveries of cacao to the cooperative had actually decreased from their 2011 level, and some of the cooperative's members reported that they received more attractive offers, both in terms of price and payment conditions, from other buyers.

Origins of the Red Guaconejo Cooperative

The Red Guaconejo (literally, the Guaconejo network) consisted of a group of 17 small farming communities located in the buffer zone adjacent to the Guaconejo Scientific Reserve in the Northeastern part of the Dominican Republic. The initial Red Guaconejo Association was formed in 2003 by a small group of farmers for the purpose of collectively marketing their produce in order to obtain higher prices than they received from local buyers. By 2005 the association had focused its activities on the collective marketing of its members' cacao, had purchased a small piece of land to serve as a central collection point, and had expanded to include 58 members. With the support of several international development organizations and U.S. Peace Corps volunteers, the organization became a legally registered cooperative in 2008, with 157 members. A constant throughout the organization's early development was its focus on the conservation of natural resources in the proximity of the Guaconejo Scientific Reserve and on the production of organic cacao.

Early marketing activities consisted basically of the collective sale of un-fermented cacao beans¹³, known as "Sanchez Cacao" to CONACADO – the Dominican National Cacao Growers Confederation – or to other private buyers.

Recognizing the advantages of fermentation, the Cooperative established a small fermentation facility capable of processing only approximately 50% of its members' cacao beans. In an effort to further

¹³ Export quality cacao must be fermented before drying and shipping. Unfermented beans (Cacao Sanchez) are of lower quality and sold at an average discount of 25% from the price of fermented cacao beans (Cacao Hispaniola).

improve their income, members of the cooperative established a small processing facility to produce chocolate balls, a popular form of chocolate in the local market. Although this effort was unsuccessful, the cooperative has been able to produce and sell powdered chocolate.

Although the Cooperative was committed to the production of organic cacao, not all of its members were certified as organic producers, which again limited the Cooperative's ability to access lucrative markets for all of its members.

Crop financing was a problem plaguing Guaconejo's membership both before and following the initiation of collective marketing. Individual farmers were often able to access crop financing through buyers or intermediaries, but at high rates of interest and with farmer's cropland as collateral. If the final sales price – which was subject to fluctuations in the world price for cacao – was lower than the farmer's debt, the farmer risked losing his or her farm.

Once collective marketing was initiated, individual farmers were no longer able to obtain buyer credit, and turned to their cooperative to obtain the necessary financing. The Cooperative was only able to obtain very limited amounts of short-term credit – generally at very high rates of interest – from CONACADO or private banks, but was unable to provide sufficient credit to its membership to fully meet their needs and increase their sales through the cooperative. On several occasions orders were turned down due to the Cooperative's lack of working capital to finance the necessary purchases, and the Cooperative's members were forced to look elsewhere for buyers.

Taza Chocolate

In 2006, following an initial contact made by a Peace Corps Volunteer working with the cooperative, Red Guaconejo was visited by the co-founder of Taza Chocolate, a small producer of stone-ground organic chocolate in Somerville, Massachusetts, with a commitment to sustainable development and direct trade with its suppliers. Impressed with the group's fit with its mission and product, Taza Chocolate made an initial purchase of 14 quintals (700 kilograms) of fermented cacao, which were sold FOB at a local airport and air-shipped to the United States. Taza Chocolate made a small low-interest loan to the cooperative in order to free it from high-interest obligations with other buyers and to finance some needed infrastructure. Following its initial shipment, further shipments of similar amounts were made on a monthly basis throughout 2007. The cacao sold to Taza Chocolate during this period was produced by members of the cooperative who had been certified as producers of organic cacao and who were able to finance their own needs until payment was received from Taza Chocolate.

Based on its initial success, Taza Chocolate elected to substantially increase its purchases from the Red Guaconejo Cooperative, and in 2008 requested shipment of a full container (504 quintals or approximately 25 metric tons) of organic, high-quality cacao.

Orders of this size (and other potential buyers had also shown interest in similar purchases) presented a number of problems for the cooperative:

1. A significantly larger number of producers would be required to fulfill such a large order, but many were not certified as producers of organic cacao and did not meet the standards of sustainable production.
2. The cooperative possessed only rudimentary fermentation facilities which were insufficient to fill large orders from Taza Chocolate or other international buyers.
3. The cooperative also lacked facilities to properly dry the cacao beans after fermentation in order to preserve their quality and prepare them for shipment.
4. Finally, since the cooperative would need to receive and store its members' cacao until it had enough to fill a container, it would need to access significantly greater amounts of working capital in order to pay its members for their cacao when it was delivered to the cooperative and to cover processing and administrative costs until payment was received for the shipped container.

The USAID/RED Project

In 2008, as the cooperative considered its need to improve its ability to meet the needs of international buyers such as Taza Chocolate, it signed an agreement with the recently-initiated USAID Rural Economic Diversification project (USAID/RED) to provide training and technical assistance to the cooperative's members and to share in infrastructure investments to improve the cooperative's capacity to process and export high-quality organic cacao beans.

Training and technical assistance provided to the cooperative's producers focused on sustainable agriculture, Good Agricultural Practices (BPA), natural resources management, and organic agriculture, and resulted in:

- 75 hectares of cacao under organic production and improved natural resource management
- 31 hectares of new cacao plantations
- 175 hectares of cacao rehabilitated
- 54 producers incorporated into organic production

By 2012, 157 of the cooperative's members had been certified as producers of organic cacao and 33 additional producers were in the process of becoming certified.

With funding supplied under the USAID small grants program, the USAID/RED project shared the investment cost with the cooperative to construct a new fermentation facility with 35 fermentation boxes, raising the total to 51 and expanding the Cooperative's fermentation capacity from 80 to 280 quintals per week (a 380% increase). In addition to the fermentation boxes, one new solar drying tunnel was constructed, two existing tunnels were renovated, and patio drying facilities were improved to permit further drying of Sanchez-type cacao. Finally, the cooperative's administration was improved with the installation of two computers and a computer-based financial management system.

The total cost of the shared investment program was US\$125,101, of which USAID contributed US\$59,421 and the cooperative and its members \$65,680 (including contributions in kind).

Root Capital

In addition to improvements in its capacity to produce, process and market high-quality organic cacao, the Red Guaconejo Cooperative needed to find a source for the working capital necessary for a major increase in its operations. Although Taza Chocolate had been helpful in providing financing for the 150 quintals it purchased from Guaconejo in 2007, the financing required to support shipments of container-loads of cacao exceeded Taza Chocolate's ability, and other sources of local financing were either unobtainable or tied to sales to local buyers. Fortunately, Taza Chocolate was able to connect the cooperative with Root Capital, a non-profit social investment company in nearby Cambridge, Massachusetts, which specialized in proving financing to the "missing middle" – organizations in developing countries which were too large to qualify for micro-financing, but too small to qualify for conventional commercial bank loans.

Root Capital, with the support of Taza Chocolate, developed a financing mechanism in which:

- The Red Guaconejo Cooperative signed sales contracts with Taza Chocolate based on the New York price of cacao plus an agreed-on premium for organic, fair-traded cacao;
- Root Capital provided the Red Guaconejo Cooperative with loans equal to 80% of the value of its contract with Taza Chocolate to pay farmers for their cacao upon delivery to the cooperative and to pay for processing and administrative costs until the crop was sold to Taza Chocolate; and
- Taza Chocolate deducted the full amount of the loan plus accrued interest from its liquidation to the Red Guaconejo Cooperative, and forwarded the funds directly to Root Capital.

This mechanism was first implemented in 2009, with a loan of \$74,000 from Root Capital to the Guaconejo Cooperative – sufficient to finance one full container-load of cacao beans. In 2010, Root Capital loaned Guaconejo \$120,000, sufficient for two containers of cacao; and in 2011 it loaned the Cooperative \$235,000 to finance three container shipment of organic cacao to Taza Chocolate during the 2011/2012 crop year.

Payment to cacao producers

The Red Guaconejo Cooperative had established a payment system to its members for their cacao which included an initial payment based on the National Cacao Commission's official price plus a premium for organic beans, plus an additional benefit based on the final sales price and the costs incurred by the Cooperative. Specifically:

1. Members were paid an "advance" equal to the official National Cacao Commission price on the day of delivery to the Cooperative (based on that day's New York cocoa market price), plus a premium of RD\$300 (US\$7.70) per quintal for organic cacao.

2. The Cooperative sold its members' cacao to its international buyers (mainly Taza Chocolate) at the New York market price for that day plus an agreed-on premium.
3. The Cooperative deducted a 30% "commission" from the sales price to cover processing and administrative costs, and returned any difference, less the advance, to the producer.

Despite the 30% "commission" the Cooperative's management reported that with three containers of exports, its income was insufficient to fully cover its expenses and make the necessary investments in plant and equipment. It estimated that between six and seven containers of exports would be required for it to fully meet its expenses and investment requirements.

Red Guaconejo Cooperative in 2012

The Red Guaconejo Cooperative's export sales to Taza Chocolate had steadily grown from less than 10 tons in 2006/07 to approximately 75 tons in 2011/12. The cooperative had developed an international reputation for producing, processing and selling excellent quality organic cacao, and was supplying its principal customer with over two thirds of its total requirements. It had also attracted the attention of other international buyers of organic cacao, and had the capacity to process twice its current volume of cacao beans. Overall, the Cooperative's sales, both domestic and export, had more than doubled between 2008/09 and 2010/11.

In 2011/12, however, export sales declined by 45% although domestic sales continued to increase (see table 1).

Table 1: Red Guaconejo Cooperative Sales: 2008/09 – 2011/12 (US\$)

	Domestic sales	Export sales	Total sales
2008/09	61,065.60	86,126.58	149,201.18
2009/10	65,661.94	239,924.05	307,595.99
2010/11	68,934.00	282,977.00	353,922.00
2011/12	72,122.17	155,872.57	230,006.74

Although a portion of the 2011/2012 sales decline may be explained by a 23% drop in the world cocoa price between the average monthly prices for 2010/11 and 2011/12, the sales figures suggest an approximate 20% decline in volume as well which cannot be accounted for by the relatively slight increase in domestic sales.

Among the reasons cited for the decline in member sales to the cooperative were uncompetitive prices and payment conditions. Members reported that they were often offered equally attractive prices by CONACADO or private buyers, with the advantage that they were paid in cash on delivery, rather than

having to wait days or sometimes longer for payment from the cooperative due to its cash flow problems. They also reported that they had not received additional payments at the end of each year due to the premium prices paid by Taza Chocolate, and that in general, they felt more like third-party suppliers than owners of their cooperative.

Members also voiced concerns regarding the management of their cooperative. No general assembly had been held since the cooperative's incorporation although one is required by statute each year. The cooperative's finances were not well understood, and little effort had been made to present a clear and accurate accounting of the organization's operations – and especially the net results of its sales to Taza Chocolate.

Root Capital had also become concerned regarding the cooperative's management, and had informed the cooperative that it would be unable to make additional loans until a general assembly had been held and a new Board of Directors elected. It also requested that sufficient technical personnel be hired to adequately meet the needs of both the cooperative's members and its international partners.

At the end of 2012 the cooperative's management had agreed on the need to hold a general assembly and renew its leadership. It remained to be seen if these steps would be sufficient for the cooperative to halt its decline and realize its potential for the benefit of its membership.

5. Findings

In each of the four case studies, one or more of the four areas of activity – organizational development, productivity and quality improvement and certification, market access, and access to financing – play an important part of the USAID/RED project’s overall impact, although to a greater or lesser extent, all four are present in each case. In general, it will be suggested that project activities focused on productivity and quality improvements, certification and access to markets have had a greater impact than those related with access to financing, and especially, organizational development.

a. Productivity and quality improvement and certification

All four case studies involved a significant focus on productivity and quality improvement and, in most cases, certification.

In the Furniture and Wood Cluster case, although the organizational development of the cluster was the main focus of the project’s activities, individual furniture-manufacturing cluster members were assisted in improving their productivity through a series of workshops and technical assistance provided by a productivity expert in their field. The implementation of cluster-sponsored activities such as production sharing with centralized quality supervision aided individual members in improving the quality of their products so as to meet common quality standards. The small grants provided to the cluster allowed it to install and utilize wood kilns to dry locally-produced lumber, an activity which both improved the quality of their final product and allowed them to source their supplies from local agro-forest producers rather than import them from abroad. Technical assistance provided to the various agro-forest producers associations enabled them to implement sustainable forest practices and improve their productivity, while assistance provided to the five groups of natural fiber weavers helped them to develop products and participate as suppliers in the wood and furniture value chain.

Sustainable agriculture, Good Agricultural Practices and GAP/GMP certification lie at the heart of the Constanza Horticultural Cluster (CHC) Case, where small and medium producers had been excluded from attractive international markets due to their lack of certification as well as their lack of access to appropriate packing and shipping facilities. Training and technical assistance to help farmers understand and implement Good Agricultural Practices (GAP) was a major focus of the USAID/RED project’s support to the CHC. The implementation of good agricultural practices in farmers’ fields also led to significant productivity increases, as the cost of chemical applications – traditionally a major part of the producers’ cost structure – was dramatically reduced. This was complimented with the renovation and equipping of a packing plant which was able to offer its international clients fresh vegetables meeting the exacting standards of the U.S. Food and Drug Administration, based to no small degree on the certification of the vegetables it received. The success of the Constanza Horticultural Cluster and its partner, the Hortipack Packing Company in shipping 13 container-loads of fresh bell peppers to the United States in late 2012 is testimony to the impact of the USAID/RED project in helping CHC producers to improve their productivity and quality through certification in Good Agricultural Practices and Good Manufacturing Practices (GAP/GMP).

Other no less important benefits of the project’s assistance to the Constanza Horticultural Cluster in the areas of sustainable agriculture and GAP certification are the reduction in contamination of the

Constanza Valley's watershed due to a reduction and rationalization in the application of agrochemicals, and the improved health of agricultural workers by reducing their exposure to toxic chemicals and insuring that appropriate protective gear is used where needed.

In the MOVICAC Case, the improved quality of the coffee processed and marketed by the organization allowed it access to export markets from which it had been previously excluded. The installation of 16 "ecological" wet mills both provided savings due to a reduced need for manual sorting, and increased the quality of the green coffee sold in the international market by improving the quality of the wet parchment delivered to the factoría. (The new wet mills also made a substantial contribution to the sustainable management of natural resources by reducing MOVICAC's use of water in the wet milling process by an estimated 20 *million* liters per year.) Investments in improved drying and sorting facilities, machinery and laboratories, as well as improved process management practices permitted MOVICAC to sell individual lots of coffee based on their quality and to reward producers based on the quality of the coffee delivered to MOVICAC. This, in turn, provided additional motivation to coffee producers to further improve the quality of their coffee. The sale of *Valdesia* coffee – a new "*denominación de origen*" coffee meeting exacting requirements of the Dominican Coffee Council – is further evidence of MOVICAC's progress in the areas of quality improvement and certification.

Finally, the USAID/RED project's support for the Red Guaconejo Cooperative focused both on helping the cooperative's members to increase their productivity, practice sustainable production and become certified as organic cacao producers; and on improving the quality of the cacao sold in the international market through the installation of additional fermentation, drying and sorting facilities. The Red Guaconejo's success in developing and sustaining a long-term relationship with Taza Chocolate, and in securing financing from Root Capital guaranteed by its sales contracts with Taza Chocolate could only have been achieved with the increase in the cooperative's capacity to produce and sell high quality (fermented) organic cacao.

In summary, the USAID/RED project's focus on productivity and quality improvement and certification was key to the success of each of the four clusters discussed in this paper. Activities designed to help cluster members to improve both their productivity and the quality of their products were successful and critical to the outcomes of the respective clusters. Certification played a major role in three of the four clusters, as *denominación de origen*, GAP/GMP, and organic certification served as formal third-party testimony to the quality of the coffee, vegetables, and cacao in terms of taste, food safety and the sustainable management of natural resources.

b. Access to markets

Improved market access is central to the USAID/RED project's overall objective, and was a major focus of the project's support for each of the four clusters. In all four cases, market access was significantly improved, primarily due to improvements in the quality and market-readiness of the clusters' production, as discussed in the previous paragraphs.

In the case of the Furniture and Wood Cluster, furniture makers were limited to filling small orders or producing articles for sale in local showrooms, but due to their small size were effectively excluded from

high volume contracts such as those offered by the Ministry of Education. Agro-forestry producers supplied only 20% of the country's need for lumber, and only 1% of the furniture industry's purchases, as most of its sales were of untreated lumber for the least demanding segments of the construction industry or for export to be treated abroad. Weavers of natural fibers basically did not exist as a productive segment due to their lack of market access. The major accomplishment of the Furniture and Wood Cluster was the development of business relationships between and among its membership to permit an integrated lumber – woven natural fibers – furniture value chain, and production sharing among members in order to meet higher volume requirements. Access to higher volume markets by furniture makers engaged in production sharing led to similar production sharing arrangements among natural fiber weavers as well as agro-forestry producers.

The Constanza Horticultural Cluster's access to the U.S. market was primarily based on its ability to meet FDA standards which, in turn, was the result of the project's technical assistance in the promotion and certification of Good Agricultural Practices by participating producers, and good manufacturing practices by the Hortipack packing plant. Market access was further facilitated by project support for business development visits to the United States to establish commercial relations with SunFed, Hortipack's marketing partner in the United States.

MOVICAC's improved market access, like that of the Constanza Cluster, was made possible due to the improvement in the quality of its product – improvements which were facilitated by the USAID/RED project. Not only was the overall quality of MOVICAC's coffee improved due to improvements in the wet milling process, but by sorting and classifying individual lots of coffee by their sensorial characteristics, MOVICAC was able to isolate and market higher quality lots at higher prices rather than marketing a single "standard" coffee made up of a mixture of different quality coffees. The magnitude of the improvement, as measured by the improvement in MOVICAC's average sales price for its coffee exports as compared to the International Coffee Association's indicator price, is the direct result of the shared investments made in improved wet milling, drying, and sorting facilities as well as the presence of an internationally qualified coffee taster with access to market segments willing to purchase the various and differentiated qualities of coffee offered by MOVICAC.

In the case of the Red Guaconejo Cooperative, initial market access was somewhat serendipitously achieved due to the initiative of a Peace Corps Volunteer and a follow-up visit to Guaconejo by the co-founder of a niche chocolate producer from the United States. The "fit" between small producers of organic cacao in the Dominican Republic and a socially conscious producer of stone-milled organic chocolate in the United States might explain the original relationship. However, the cooperative's ability to meet Taza Chocolate's volume requirements by increasing its exports by a factor of 8 in less than five years was only made possible by the combination of improvements in producers' productivity and organic certification, improvements in the cooperative's processing facilities, and access to financing through Root Capital which, in turn, was only possible due to the cooperative's sales agreements with its principal buyer – Taza Chocolate.

All four clusters were able to access broader markets for their products as a result of USAID/RED project activities, primarily due to major improvements in quality and certification which were the direct result

of project activities. The quality improvement and certification activities were in some cases supported with explicit market development initiatives designed to place improved products in more attractive market segments.

c. Access to financing

Access to financing was only an explicit issue in two of the four case studies, although it may be assumed to be an issue of importance in all four cases.

Although access to working capital financing was not mentioned in the Furniture and Wood Cluster case, one of the benefits of a large contract such as those negotiated between the cluster and the Ministry of Education is the possibility of using the contract to secure working capital financing. As the size of contracts increases and the time between the start of production (or the purchasing of supplies) and final payment lengthens, access to working capital becomes more critical. A cluster organization, serving as the point of contact between a single large buyer and multiple producers linked together under a production sharing arrangement, is in the best position to negotiate working capital financing on behalf of its members and will be in a vastly better position to obtain such a loan than any of its individual members by themselves.

Working capital was also not mentioned in the Constanza Horticultural Cluster case, although it may be assumed that the waiting time between the delivery of fresh produce to the packing house and final liquidation by SunFed must put a considerable strain on the resources of the organization's participating members. In the case of CHC's initial shipments, the more established cluster participants were the principal suppliers of fresh produce, and are apparently able to meet their working capital needs – including the working capital requirements of Hortipack – without recourse to any sort of collective financing arrangement. However, as additional less-well capitalized cluster participants join the founding members in delivering GAP-certified produce to Hortipack, it will be important for the organization to develop alternative forms of working capital financing for its participating members. The organization's investment in the packing house may provide sufficient collateral for working capital financing, or members may be asked to make additional investments in order to support the organization's need to finance their member's working capital requirements while their produce is being processed and exported.

MOVICAC and the Red Guaconejo Cooperative present two cases where working capital financing is a major issue: in MOVICAC, limited access to financing threatens to limit the organization's ability to grow, while in the case of the Red Guaconejo, the financing arrangement with Root Capital was the key to growth.

MOVICAC, which is organized as a non-profit organization and as such has no owners, is limited in its ability to increase its purchases of wet parchment coffee from its growers due to its lack of funds to provide growers with an acceptable advance payment upon delivery of their coffee to the factoría. Were this not a constraint, it could easily double its volume of exports. Coffee growers, who have financed their production throughout the growing season generally from their own resources, have the option of selling their crops for cash to outside buyers, or delivering them to MOVICAC. While promised a higher

net return, growers also must meet their immediate cash needs and generally are unwilling to deliver to MOVICAC unless they can be advanced at least 80% of the current local market price. Since MOVICAC has no owners, whatever bank financing it is able to obtain is guaranteed only by those physical assets which are not already pledged as guarantees for the debt which was required to pay for its share of the investment in improved plant and equipment. Unlike the Red Guaconejo, MOVICAC's foreign buyers are highly diverse and sales are made for spot delivery rather than on a long-term basis, thus eliminating the possibility of financing by Root Capital (or a similar organization) guaranteed by export contracts.

MOVICAC's principal challenge will be to resolve its working capital problem. Given its current structure as a non-profit organization, this cannot be accomplished based on any sort of equity contributions by its membership despite the attractive returns earned by its membership for the sale of their coffee through MOVICAC.

One alternative available to MOVICAC would be to reorganize itself as a producers' cooperative, and to increase its equity base through the retention of a portion of each member's net "profit" or excess returns. Such "cooperative retentions" are members' investments in the cooperative's capital structure which can be used to guarantee working capital financing, but they belong to the owners and are redeemable upon a member's departure from the cooperative.

The Red Guaconejo Cooperative presents a case in which the organization's needs for working capital were met through the creative tri-partite financing arrangement involving Root Capital as the lender, and Taza Chocolate which repays the loans by discounting their value from their payments due to the cooperative. This arrangement, of course, depends on the existence of sales contracts between the cooperative and Taza Chocolate which, in turn, depends on Red Guaconejo's ability to meet Taza Chocolate's needs for high quality organic cacao.

Unfortunately, it also depends on the Red Guaconejo Cooperative's capacity to manage itself to the satisfaction of its members, and to offer its members sufficient incentives to continue to deliver their cacao beans to the cooperative. The failure of the cooperative to fully meet this last condition has placed its continued relationship with Root Capital in jeopardy, which in turn could make it difficult to meet Taza Chocolate's future purchasing requirements.

Working capital is a basic requirement for all business and may be met either through the organization's own resources (equity capital) or through working capital loans. Membership organizations involving large numbers of small producers are unlikely to have sufficient equity capital to fully finance their working capital requirements, and generally require access to second- or third-party financing. Tri-partite arrangements such as the Root Capital – Taza Chocolate arrangement are possible when long-term contracts with a small number of buyers are involved, but are generally not a solution for organizations selling on the spot market to large numbers of customers. In these cases, third-party financing may be the only alternative, and generally must be guaranteed by appropriate levels of equity capital. As non-profit organizations lack the ability to raise equity capital through investments or cooperative retentions, their ability to secure working capital financing may be especially difficult and may indicate a need for moving to a different legal structure which does permit owner-investments.

d. Organizational development

As discussed earlier, the USAID/RED project promoted the establishment of formal cluster organizations which, in addition to serving as the focal point for various forms of technical assistance, were frequently expected to manage one or more value-chain activities such as packing or processing, on behalf of their members. This decision has led to three separate but related issues which have, in some cases, detracted from the power of the cluster concept and/or limited the organizations' ability to best serve its members.

1. By assuming a participatory role in the value chain, a cluster organization is almost by definition entering into direct competition with some of its members or potential members. If a true cluster involves participants at all stages of the value chain, a cluster organization which assumes a direct role in the value chain will play a role which either is or could be played by a member of the cluster. However, in most cases where the cluster concept is applied in developing markets, it is the absence of a critical value chain function which sometimes justifies the assumption of that function by the cluster organization, as is the case for with the Constanza Horticultural Cluster. More commonly, however, producer dissatisfaction with "rapacious intermediaries" and/or a lack of access to value-added activities underlies strategies of forward integration. This is the case for both MOVICAC and the Red Guaconejo Cooperative. Either way, the "cluster" begins to look more like a producers' organization or cooperative, which is certainly not bad, but may detract from the potential benefits of the cluster concept. And while the USAID/RED project's organizational development activities have generally promoted the inclusive nature of a cluster, the reality of the resulting organizations has been to limit most of the organization's benefits to producers, making the presence of participants from other stages of the value chain somewhat superfluous.

One alternative which might allow producers to integrate forward while at the same time preserving the cluster concept would be to form a producers' organization or cooperative and separately, to develop the cluster concept – with or without a formal "cluster organization" – to include members drawn from throughout the value chain.

2. Most of the cluster organizations formalized with the support of the USAID/RED project were established as non-profit organizations under Dominican law. While this format is simple and relatively easy to register, it does not lend itself well to an organization which is expected to undertake value-chain activities on behalf of its membership. This was clearly demonstrated in the MOVICAC case, where due to the organization's limited ability to raise capital, it was unable to obtain the necessary third-party financing for working capital to expand its level of operations. More generally, any organization engaging in a business activity will require additional capital for the purchase or renovation of physical assets and/or additional working capital as it grows. While modest requirements might be met through charitable donations or a profit on services provided to their members, any significant growth in capital will require additional investment. Even capital growth based on profits on services provided to members raises an ownership issue where members are paying a price for the growth of an organization

in which they hold no financial equity. The principal problem with organizations which do not provide for owner-equity (such as a non-profit organization) is their lack of ability to raise investment capital – either from their members or from outside investors.

The cooperative form of organization, which has been proven successful over many years in countries throughout the world, is perhaps the best organizational structure to meet the needs of organizations where a value-added function, such as processing or marketing, is performed on behalf of their members. Under the cooperative structure, members contribute to the organization's capital structure in proportion to their use of the cooperative's services, with "cooperative retentions" frequently deducted from payments made to members based, again, on their use of the cooperative. Members are given stock certificates (or other evidence of ownership) equal to the value of the cooperative retentions. For a cooperative engaged in processing and marketing activities, cooperative retentions would be deducted on a pro rata basis from the net benefits due to producers for processing and marketing their crops.

It is understood that Dominican legislation regarding the organization and operation of cooperatives may be unnecessarily cumbersome and may constitute a barrier for producer organizations wishing to organize themselves as cooperatives. In order to promote increased use of associative forms of processing and marketing among rural producers, current legislation should be reviewed and changes introduced to improve access to the cooperative format for small producer groups.

3. Thirdly, the role of the Executive Director of the cluster has been confused with the managerial role required in a business organization. One of the USAID/RED project's activities was to support the appointment of an "Executive Director" for each cluster and to pay his or her salary for a limited period of time. The specific roles of the clusters' Executive Directors were generally focused on the expansion of their membership, serving as a point of contact between the project and the cluster's members, and coordinating the various forms of technical and financial assistance offered by the project.

The specific role of managing an on-going business enterprise involved in the reception of raw materials and the processing and marketing of value-added products in competitive world markets does not appear to have been an important consideration in the appointment of the Executive Directors, and additional preparation to assume this role does not appear to have been a priority for the project.

Of the four clusters described in this paper, the current situation of the Red Guaconejo Cooperative most clearly illustrates the need for greater attention to organizational strengthening and management, although both the MOVICAC and Constanza cases also point to deficiencies in their respective management – especially in terms of their ability to plan, manage and report their financial condition.

The Furniture and Wood Cluster presents the clearest example of a cluster organization in the purest sense of the word, with a membership which includes all segments of the value chain and a role for the cluster organization which is limited to encouraging and facilitating greater commercial interactions between and among its members. The USAID/RED project properly focused most of its efforts on strengthening the cluster organization and on providing technical assistance to its members so as to facilitate further integration of the value chain and an overall increase in its level of commercial activity. Small grants were provided to fill a few gaps, such as for drying kilns, but the cluster had not attempted to assume a business function which might be assumed by one or more of its members. Although the cluster organization was instrumental in negotiating contracts with large buyers such as the Ministry of Education, it did not assumed a role in fulfilling these contracts, leaving to the membership all value-added activities involved.

Because the Furniture and Wood cluster organization does not play a direct role in the wood and furniture value chain, it does not require an individual with managerial capabilities and, in fact, is now managed by its elected Board of Directors with no need for a formal Executive Director.

The Constanza Horticultural Cluster, rather than assuming a direct role in the management of value chain activities, supported the establishment and capitalization of the Hortipack packing house to carry out packing and marketing activities on behalf of its members. While this arrangement has the benefit of separating the Hortipack managerial role from the CHC promotional role, in practice the cluster's Executive Director has assumed the role and title of Hortipack's administrator (which also pays her salary). While her commitment to both CHC and Hortipack, and her success in facilitating the shipment of 13 containers of bell peppers to the United States are beyond question, possible weaknesses were detected in the areas of financial planning, management and reporting which raise questions regarding the organization's long-term financial viability.

MOVICAC is led by a charismatic director who is also a coffee producer and whose vision is largely responsible for the organization's success in moving into the highest-paying segments of the international coffee market, and in ensuring that the benefits of the higher prices flow back to its members in proportion to the quality of their coffee. However, as was the case with the Constanza Horticultural Cluster, weaknesses were detected in the organization's bookkeeping and financial reports. More importantly, the organization is now facing a serious problem in relation to its working capital which was apparently unforeseen as its financial structure was designed and implemented. As in the case of Constanza, the organization would benefit from improved capacity in the area of financial planning, management and reporting.

The Red Guaconejo Cooperative had been formally organized as a cooperative before its involvement with the USAID/RED project, and this format has provided the legal basis for its contractual commitments to both Taza Chocolate and Root Capital, as well as with its membership. As a cooperative, Red Guaconejo is also able to increase its capital structure through cooperative retentions and credit those retentions to its members' equity accounts in the cooperative.

Unfortunately, the management of a cooperative is not easily understood or practiced. In Guaconejo's case, the cooperative's current management lacks the financial sophistication to correctly calculate its cost of operations and deduct them from sales, and uses an arbitrary percentage (30%) as a "commission" to cover its costs. Due to the cooperative's current level of operations, this percentage does not cover its operating costs and would only be sufficient if the cooperative operated at a significantly higher volume (6 or 7 containers per year rather than 3). However, were it to deduct an even greater amount from payment to its members, the net prices paid to its members would be even less attractive, driving even more members to deliver their cacao beans elsewhere. As it is, the cooperative's financial structure and operating results are so confused that it has been unable to present financial results or statements of financial condition to its membership since its incorporation six years ago. This is clearly unacceptable and seriously threatens the future of an organization which has demonstrated success in producing, processing and exporting highly-valued organic cacao beans to an international buyer with financing supplied by an international lending organization.

The Red Guaconejo Cooperative urgently requires not only a General Assembly and the election of a new Board of Directors, but also the intervention of a qualified financial analyst to help it to straighten out its books and develop a financial plan which will guarantee its future viability by both covering its operating costs and assuring its membership attractive net returns for their organic cacao.

6. Summary finding and recommendation

In all four case studies discussed in this paper, the USAID/RED project's activities which focused on improved productivity and quality, and on third-party quality certification; as well as activities which focused on increased market access (generally as a result of the improved quality) were successful in contributing to improved livelihoods for the clusters' membership and in reaching the project's goal of identifying products and services where the country possesses an inherent comparative advantage and strengthening its capacity to compete internationally in those products and services.

While access to working capital financing for the cluster organizations was not an explicit goal of the cluster strengthening strategy, the importance of working capital as a limiting factor to organizational growth is most clearly seen in the MOVICAC case, and a successful model to overcome this limitation is seen in the Red Guaconejo Cooperative case. The importance of good financial planning, including planning to meet future needs for working capital, is an element of organizational capacity strengthening which cannot be overlooked.

The use of the cluster concept as a framework for organizing value chain participants within a specific geographic locale offers the benefits of promoting constructive vertical and horizontal commercial integration within a cluster, as was most clearly demonstrated in the Furniture and Wood Cluster case study. Cluster organizations which are called on to provide value-chain activities on behalf of their members (usually producers) may become confused with producer organizations such as cooperatives, and may actually be more usefully be organized as cooperatives in order to facilitate future needs for increased capital.

But a cooperative, like all forms of business enterprise, requires managerial competencies including the ability to transparently plan, manage and report the organization's financial operations and condition. The clusters and their members which have participated in the USAID/RED project have been successful in improving their productivity and quality, and in gaining access to more attractive international markets. They will now need to focus on the development of improved organizational structures and managerial practices, including especially the development of improved capacities in the area of financial planning, management and reporting, in order to ensure their long-term sustainability.